

AMENDMENT TO THE CLAIMS**Claims 1-8 (Cancelled)**

9.(**New**) A compression refrigeration system including at least a compressor (1), a heat rejector (2), an expansion means (3) and a heat absorber (4) connected in a closed circulation circuit that may operate with supercritical high-side pressure wherein the system heat pump efficiency can be improved by controlling the compressor suction gas superheat and that carbon dioxide or a refrigerant mixture containing carbon dioxide is applied as the refrigerant in the system.

10.(**New**) System according to claim 9, wherein the superheat will be increased when the temperature of the heat source is above a predetermined level.

11.(**New**) System according to claim 9, wherein the limitation for the superheat will be compressor discharge temperature, which can not exceed a predetermined level.

12.(**New**) System according to claim 9, wherein the split stream from the heat rejector 2 is used for compressor suction gas superheating.

13.(**New**) System according to claim 9, wherein the split stream from the high pressure side is expanded directly down to heat absorber pressure after suction gas heating.

14.(**New**) System according to claim 9, wherein the split stream flow may be regulated in order to control suction gas superheat.

15.(**New**) System according to claim 9, wherein the counterflow heat exchanger is used to heat the compressor suction gas.

16.(**New**) System according to claim 9, wherein the counterflow heat exchanger may be a separate unit or the internal heat exchanger if already installed.